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(LETTERS, &c.)

141. ————— [3/5]

Revenue Department,

TO DOCTOR ANDREW BERRY,

Superintendent of the Honorable Company's Nopalry.

SIR,

I AM directed by the Right Honorable the President in Council, to acknowledge the receipt of your letter, dated 26th ultimo, and to enclose for your information extract of a letter, which was sent to the Board of Revenue, in consequence of your report upon the culture and manufacture of Cochineal at this presidency.

I am, Sir, &c.

J. WEBBE,

SECRETARY.

Fort St. George, September 12th, 1795.

*Extract of a Letter to the Board of Revenue, dated
29th August, 1795.*

We enclose for your information, copy of a letter which has been addressed to us by the Superintendent of the Company's Nopalry, upon the subject of the Cochineal Insect, which has been lately introduced upon the Coast; this paper we would have you communicate to the several collectors under your Board, and inform them, that we annex the greatest importance to the object of promoting the breed of this insect; as we have reason to hope from the experience already obtained, that it is likely to become a source of essential benefit to the Company.

The facility with which the *Opuntia* may be cultivated, and the simplicity with which the management and care of the Cochineal may be carried on, induces us to desire you will recommend to the collectors to exert themselves in the most strenuous manner for the purpose of securing to the public, the full advantage of so valuable an acquisition: with this view, we desire that a spot of ground, fifty or sixty feet

square, may be enclosed at some of the Cusba villages under every collector, which Doctor ANDERSON thinks will be sufficient to begin the cultivation of the Cochineal, and which should be prepared by placing in it one hundred plants of the *Opuntia*, called by the Tamuls, *naga calli*, at the distance of five feet from each other.

A true Extract,

J. WEBBE,

SECRETARY.

TO JAMES ANDERSON, Esq. P. G.

UNTIL lately, I imagined the drill plough to be a modern European invention, but a short time ago, riding over a field, I observed a drill plough at work, very simple in the construction; which upon enquiry I find is in general use here, and has been for time immemorial.

This led me to make some farther enquiries into their mode of husbandry here, and I find that drill husbandry is universally practised in the Innacondah district, in the culture of all grain, except horse gram; and is also used in the culture of tobacco, cotton, and the castor oil plant.

In the practise of this husbandry they have two other ploughs in use here, exclusive of the drill plough, and the common plough, one of these has a horizontal share and immediately follows the drill plough at work; it is set into the earth about the depth of seven or eight inches, and passes under three drills at once. It operates by agitating the earth, so as to make the sides of the drills fall in and cover the seed again, which it does so effectually, as scarcely to leave any traces of a drill.

The other plough alluded to, is used after the corn is about eight or ten inches high; it cuts up the weeds between three drills at once, and earths up the roots of the corn at the same time. I cannot by writing, give you an adequate description of the three ploughs, but will send you a set of them if you wish it, accompanied by a man who has been in the practice of working them.

I have some reason to think this drill plough, simple as it is, possesses an advantage that the patent drill plough does not: for I remember reading in some publication, that the patent drill plough, was defective in not dropping the grain equally. This plough has no defect of that kind:—it has three teeth about eighteen inches long and ten inches asunder; through the upper end of each tooth near the back, is inserted a hollow bamboo of

an inch in diameter and about three feet in length; these three bamboos are set upright, and their upper ends are brought nearly together in the form of a triangle, and inserted through the bottom of a wooden cup;—this apparatus is supported and made steady by cords, in the way of shrouds, which lead to different parts of the plough.

In working the plough, the cup is not filled with grain, but is fed by hand: this labour is performed by a woman, who walks on the left side of the plough, with a bag or large pocket of grain before her; her right arm stretched out, and her wrist resting on the edge of the cup; her hand is filled with grain, and by moving her fingers she lets drop into the cup, as much grain as supplies the three drills in due proportion.

When the grain in her right hand is nearly expended, she fills it again from her left hand; observing never to take her right hand from the cup, while the plough is in motion, as that would leave a vacant space in the field.

The drill plough which drops the grain by some piece of mechanism, will probably never sow a field so equally as is done in this way; and here is a remedy for the defect complained of in the English drill plough.

Whether the expence of two persons to work this plough may or may not make against its being introduced into England, in preference to that now in use, I shall leave to be determined by those who are better acquainted with the subject; yet when it is considered, that supplying the cup, is a labour performed by women, and how soon an acre is sown in this way, perhaps it might not be rejected on account of the additional expence, which could be but trifling.—The first cost of a plough of this kind, could be but a few shillings; whereas the patent plough is an expensive machine.

A gentleman who is now here on a visit, informs me, that his grandfather who farms part of his own estate, practises the drill husbandry; but found the drill plough dropt the grain so unequally, that he laid it aside, and now from a conviction of the superiority of the drill husbandry, uses a drill roll which has a number of pegs upon it, and makes holes in straight lines, into which the seed grain is dropt by hand.

This is a tedious way and he informs me has also its defect, as it is done by children, whose hands in the cold season, when wheat is sown, are apt to get numbed, and they often drop too many grains into each hole;—however, many prefer this method to the drill plough at present in use.

Whither the plough with a horizontal share for covering in the drills, is in use in England, I know not; if not, it will be an

acquisition to those who practise the drill husbandry. I am also equally uninformed, whether the instrument used here for cutting up the weeds, between the drills is known in England: it is simply three small mamoties set upon three teeth, placed at the same distance from each other, as the teeth of the drill plough.

By my sending you these instruments, you will have a better idea of them than I can convey in writing; but as I am informed by a man from the Carnatic, that the drill husbandry is used in some parts of it to the westward, you may possibly have seen these ploughs, and in that case it will be unnecessary.

You correspond occasionally with the Board of Agriculture; should you think these instruments will be useful in the drill husbandry at home, I will thank you to forward the set I shall send you to them:—if, however, you should find that the instruments have been already described in any publication, and that it is a matter known amongst Europeans, that the drill husbandry has long been practised in this country, it will of course be worth no further attention; but so far as I know at present, I am the first European that ever noticed it; for although it has been practised under the eyes of every body in the Guntoor Circar, no one that I mentioned it to ever observed it before, nor did I observe it myself till lately.

I remain, &c.

THOMAS HALCOTT.

Innacondab, December 31st, 1795.

TO JAMES ANDERSON, Esq. P. G.

I AM ready for about 15,000 more mulberry cuttings, but I do not know when I shall be able to get them, as we have collected all that is in the neighbourhood:—we have sent twenty bullocks to Arcot for cuttings, and I am in hopes they will be here loaded in a few days.

I have supplied Mr. CARNIE, Surgeon, at Royacotta, with some Cochineal insects, and with all the instructions that I was able to give in regard to the care and cultivation of them, as he has made a small plantation, and has it pretty forward with the Nopal.

EYRE W. LYTE.

Trippatore, January 4th, 1796.

TO CAPTAIN HALCOTT,

Commanding Innacondab.

I AM favored with your letter of the 31st ultimo, on the drill plough, which as far as I have been able to dis-

cover, is perfectly new to every European, and as a curiosity at least will be esteemed a valuable present by the President of the Board of Agriculture, to whom you may depend on my sending it by the very first ship.

JAMES ANDERSON.

Madras, January 5th, 1796.

TO MR. LYTE.

Trippatura.

I AM favored with your letter of the 4th, and observing your uncertainty of getting mulberries for your plantation, as the gardens at Arcot, have all been covered with several feet of sand by the late storm—I this morning, dispatched 5 coolies with 4,500 cuttings dipp'd in liquified cow dung, which will all be budding by the time you receive them, but for the convenience of package and carriage, as they are 20 inches in length, it will be in your power to cut them in two, which will afford nine thousand plants; and I have directed this quantity to be sent every day till you are fully supplied.

J. ANDERSON.

Fort St. George, January 9th, 1796.

TO JAMES ANDERSON, Esq.

ACCEPT my grateful thanks for your last communication, which I have perused with great satisfaction.

In Major MÜCHLDOERFF's the Moravian Brothers, and our Mission's gardens, millions of cochineal insects are already feeding upon extensive plantations of the *Cactus Opuntia*, and the natives even start at them, and at the fine red colour shewing an inclination to follow our example.

We are at the same time much obliged to Doctor BERRY, for his observations which perfectly agree with ours, only we wish to find out an easier method to take off the white coverings of the insects.

If you would oblige me by a set of all your publications, I would esteem it a great favor, as I have sent all I had to several societies in Germany, and intend to draw from them a short history of the industry you have so much encouraged on this Coast.

I am &c.

C. S. JOHN,

Tanquebar, January 9th, 1796.

TO DOCTOR ANDERSON, P. G.

I AM favoured with yours of the 5th, and will with great pleasure send a set of the ploughs, for the President of the Board of Agriculture.

This is not a rice country; but a Carnatic man, whose family practises the drill husbandry somewhere to the westward of Madras, informs me that it is there used in the culture of rice, and is vastly superior to the method generally used of making a seed-bed, and transplanting it by hand.

At the commencement of the rains, he says, the paddy field after being well ploughed by the common plough, is sown by the drill plough, and left to the natural rains, till it gets into ear; and it is then, and not till then, flooded by art; so there is not only a great saving of labour, but of water, which in years when the rains are scanty, is a more material saving than even that of labour.

He informed me, the drill husbandry to the westward of Madras, was only partially used, and that chiefly by the wealthiest and most intelligent of the ryots. I asked him how it could happen, that the poorer sort did not avail themselves of so obvious an advantage,—he said, the people were poor and ignorant, and it could not be attempted by those who had less than three yoke of stout oxen; one for the drill plough, another for the horizontal plough which follows, and allowance made for the accidental lameness and sickness of cattle. The weaker kind are not able in a miry soil, such as paddy field, to draw the plough so straight as is required; and buffaloes, are seldom so manageable, as to plough very strait; these he said are the reasons why the drill husbandry is not more generally adopted in the culture of rice; for all agree in this, that it saves a great expence of labour and water.

Every thing in this district, except horse gram, is cultivated by the drill husbandry; I may mention hemp, in addition to the articles I before enumerated; of its superiority in the culture of cotton, I had a convincing proof the other day, when I saw more weeds cut up by the mamoty plough before described, in an hour, than could have been done by hand by many coolies in a whole day.

This cotton was of a dwarf species, and was sown by the drill plough; I saw another field of a different kind, the drills about thirty inches asunder; this I understand was sown by hand; the drills were made by the common plough. In the same way is sown the castor oil seed, the drills about a yard asunder; in short, the drill husbandry is practised by every ryot in this district, without a single exception.

You shall have the ploughs by the latter end of the month:
I remain, &c.

THOMAS HALCOTT.

Innacindah, January 10th, 1796.

TO JAMES ANDERSON, Esq.

I am just favored with your kind letter, and happy to hear that it lies in your power to furnish us with mulberry cuttings for which Captain READ desires his best thanks. Having collected all that is in the neighbourhood and other parts of the Bar-ramahl, I have the pleasure to inform you, that I have now in the ground about twenty-five thousand cuttings, all of which I am in hopes will do very well, and am ready for as many more.

Captain READ is desirous that you may be acquainted that although the expence be great from Madras to Trippatore, he would wish you to keep forwarding the plants as you mention, until you have sent a lack, as we are very desirous of getting as many in the ground as possible, while there is plenty of water, to be had for them.

I have the pleasure to inform you, that we have got the black pepper plant from Tinnevely, and Captain READ has the promise of the Cinnamon in the month of march, from Mr. MARTIN, Resident of that place:—he is likewise promised some coffee plants from Saut Gurr.

EYRE W. LYTE.

Trippatore, January 11th, 1796.

TO JAMES ANDERSON, Esq. P. G.

I HAD the pleasure of receiving your last publication yesterday upon many very interesting subjects, for which I return you sincere thanks, from the very favorable event of the experiments made by Dr. Berry, relative to the dye of the Cochineal, I hope that the culture of that valuable insect will now meet with every due encouragement.

It is nearly three months since, I planted about two thousand slips of the prickly *Opuntia*, on some waste ground, which I cleared in the jungle and which from its being well sheltered on every side from the winds, by the hills and woods surrounding it, I hope will be a favorable spot for the culture of Cochineal.

A fortnight ago, I received some insects upon a plant, from Mr. LYTE, at *Trippatore*, which I have since transplanted,

and the young are now beginning to appear in numbers, upon many of the plants.

To remedy the great inconvenience which must arise in collecting the insects, by the prickles upon the nopals, I have observed, that young prickles full grown can easily be pulled off by the fingers. and the old ones broke across upon the edge of a knife, by which means the plants can be handled at pleasure; and in this way, one person may clear several plants during the day.

I have the honor to be, with much respect,

JOHN CARNIE.

Rayacottah, January 11th, 1796.

TO DOCTOR ANDERSON, P. G.

I WITH pleasure acknowledge the receipt of your last publication, and am happy to observe that you have succeeded so well at Madras in the cultivation of Cochineal. The last method proposed by *Doctor BERRY*, for killing and preparing the insects, appears to be by much the best, as by that none of the dye can be lost.

The Cochineal insects which *Doctor BERRY* forwarded me sometime ago, produced as many young as covered twenty small plants. On the 3d ultimo, just fifty days from their first appearance, they again began to bring forth, and have stocked a considerable number of plants; so much so, that *Mr. HANKEY*, who saw them the other day, says, I have now as many as would supply all the *Barramah*l.

As the plants which I first planted were rather young when the insects were attached to them, they have suffered considerably in their growth; for which reason I have planted another piece of ground with strong juicy nopals, each about a yard high; on which I intend to have the insects placed for the next breed, which I expect will be very numerous; and when they come to their full growth, I mean to prepare a quantity of them for use.

SAMUEL MAC MORRICE.

Salem, 11th January, 1796.

To the Officer commanding on board the *Rodney*.

SIR,

PLEASE to receive on board four ploughs, directed to Sir John Sinclair, President of the Board of Agriculture.

W. CARRUTHERS.

Madras, 11th February, 1796.

Received on board the Rodney, February the 22d, 1796.
four ploughs directed to Sir John Sinclair, Bart.

J. C. LOCHNER.

TO SIR JOHN SINCLAIR, BART.

President of the Board of Agriculture.

SIR,

I HAVE the pleasure to transmit you an account of the drill husbandry of this country from a very intelligent person, *Captain HALCOTT*, and to illustrate the subject, I have shipped on board the Rodney; a complete set; viz. the common plough, the drill plough, the small horizontal plough, for covering the seed in the drills, and the weeding plough.

As they are put in separate packages to save room, I have caused the parts that are disjoined to be marked with the same letters and figures, to enable you to put them together; and although they may appear very simple, yet as on farther enquiry they will be found to be in use over the Peninsula, I have no doubt you will think them deserving the attention of the Board.

I am, &c.

JAMES ANDERSON.

Fort St. George, February 22d, 1796.

TO DOCTOR ANDERSON, P. G.

IN the present infant state of the Cochineal it may be satisfactory to you to be informed of its progress, wherever it has been attempted.—I have, therefore, sent you a small sample of my production, and also a proof of its quality in a piece of cloth dyed with it by Mr. FLEMING, marked A; with which, I have sent you another piece of Cloth dyed at the same time with some *grana fina*, procured at the dispensary here.—In doing this, Mr. FLEMING observes, that the quantity of Bengal Cochineal used, was to that of the *grana fina*, as three to two; viz, two drachms of the former and one drachm and one scruple of the latter: in every other respect the two processes were exactly similar.

The nopalry I have consits at present for production in about an acre: I am, however, very cautious not to load the plants too much with insects, until they have taken strong root.

In December, I collected about four pounds, which Mr. FLEMING, has sent home to the Court of Directors.—My situation I am sorry to say, will not allow me to give any attention to it, so

as to make it profitable :—it has been hitherto attended to merely as an amusement.

G. TASWELL.

Calcutta, February 14th, 1796.

TO THE RIGHT HONORABLE LORD HOBART,
Governor in Council, &c. &c. &c.

MY LORD,

I HAVE the honor of herewith transmitting two pounds and three quarters, of dried Sylvester Cochineal, reared here, for the Honorable Court of Directors by the ships at present under despatch; it has been prepared in the manner described in my letter of the 8th of December, which renders the separation of the coverings and all impurities easy and expeditious; and when daily exposed to the sun for eight or ten days after the insects are killed, before any attempt is made to rub off the silky coverings, to allow of their gradual shriveling and becoming hard, they differ so little in appearance from the fine Cochineal, (size of the insects excepted) that I hope, thus prepared, it will not be found much inferior; as the difference in value from all the accounts I have read, is said to be in part owing to the coverings adhering, which can never be detached when the insects are killed, by immersion in boiling water, as at first recommended. I have not separated the large insects from the small, as I believe they are all equally colouring; but if this is an object it can readily be done, as I find by different specimens sent from England, that the size of the fine Cochineal makes the difference of 1st, 2d, 3d, 4th, forts, &c.

I have thus long delayed, considering the speedy despatch of the ships for England, forwarding this small quantity that it might be perfectly dry and not liable to be injured by mouldiness; and to rid it entirely of its moisture, it has required daily exposure to the hottest sun-shine for more than twenty days; but being doubtful whether this great degree of dryness is necessary or proper, I have also enclosed in the package a smaller quantity, weighing nearly three quarters of a pound, that has only been exposed to the requisite heat to detach the coverings.

I informed your Lordship in a former letter, of its being sent to different stations to the northward, southward, and westward, and every where its multiplication and hardness has been astonishing: those sent to Chingleput, a little before the late inundation there, were not destroyed although they were for eighteen hours many feet under water, the collection of the insects and preservation of the plants, constitute therefore the only labour.

Having had much pleasure in finding the value of the dye of our Sylvester Cochineal from Brazil, confirmed by a late publication of character, Doctor Bancrofts, "*on the theory of permanent Colours*," I trust I will be excused in transcribing the following extract:—"It would not be very difficult to convey

"both the insects and the *cactus cochénilifer* to the East Indies, and there propagate both, so as to obtain in a few years from thence ample supplies of a drug so highly important in a great manufacturing country, and for which nearly £ 2,00,000 sterling are annually paid by this to the Spanish Nation; especially as great advantages would result in this respect from the cheapness of labor and subsistence in the East Indies.

"Unfortunately, however, it does not appear that any means have yet been effectual in procuring the domesticated insect, or even the Sylvester, though this last exists in Jamaica—as does the true nopal) and in many other accessible parts of America, and probably in more than ordinary perfection in Brazil; at least I made trial about the year 1787, of some which had been sent from thence by the way of Lisbon, and which yeilded full as much colour, and of as much beauty, as half its weight of the best fine Cochineal: and until this last can be obtained, would it not be adviseable to make trial of the other which by being properly nursed and nourished upon the true nopal, might perhaps in a little time improve, so as to supersede the necessity of seeking any farther."

The expectations above set forth may certainly be realised, but it would not appear that the nopal sent here from Kew garden can be the true nopal, though so nearly resembling it in leaf and flower, from none of the Sylvester Cochineal taking to it.

I have the honor to be, with the greatest respect,

MY LORD,

Your Lordship's most obedient humble Servant,

ANDREW BERRY.

Superintendent to the Honorable Company's Nopalry.

Fort St. George, February 15, 1796.

TO DOCTOR ANDREW BERRY,

Superintendent to the Honorable Company's Nopalry.

SIR,

I AM directed to inform you, that the Right Honorable the President in Council, being desirous of holding out the most solid encouragement to the manufacture of Cochineal, is pleased to desire, that you will state your opinion, as to the price which

it may be expedient for the Company to offer, to such of the natives, as may be disposed to employ their industry in this pursuit.

I am,

SIR,

Your most obedient Servant,

J. WEBBE,

SECRETARY.

Port St. George, 13th March, 1796.

TO THE RIGHT HONORABLE LORD HOBART,

Governor in Council, &c. &c. &c.

MY LORD,

I HAVE been honored with your secretary's letter of the 13th instant, desiring my opinion as to the price which it may be expedient for the Company to give for Cochineal, and at the same time adequate to afford a solid encouragement to the natives to engage in the culture of it. There can be no doubt that your Lordship's wish of promoting generally an attention to the rearing of Cochineal, will be best answered by holding out an immediate advantage to the natives in the sale; yet I am doubtful whether in the present infant state of its culture amongst them, the price that would be suitable for the first intention would be considered so for the second. The utmost that I have yet been able to have properly collected by one person in a day, without bruising the insects has been half a pound, and when this is dried, cleaned, and good sized insects only kept, there will remain about one fourth of the weight, as picked off the leaves. If one Pagoda, therefore, for every pound of Cochineal so prepared, is given, an industrious man may earn nearly four pagodas per month, which allowing for the care and cultivation of the plants will give more money to the individual labourer, than he can otherwise receive, especially to native labourers, in the employment of their women and children, and this price the Company can afford to give from every information I can learn with advantage, for Sale in Europe; for even by *Thierry de Menonville's* account, the price paid at *Guaxaca*, is equal to 8s. 8d. sterling per pound. However, advantageous in point of view this culture appears, yet in few places will the natives engage, unless the Company in the first instance by small plantations at each village shew how it can be done, and even then they will probably not think the price sufficient, if not allowed a freedom in the sale; being well acquainted with its greater value as an article of trade to the

interior parts of the country. Something of this kind should be done soon, to shew them the necessity of the care and frequent examination of their plants, otherwise the rapid multiplication of the insect at the different stations to which it has been sent, will do much more harm than good; for if great attention is not paid to gather them, check their propagation and allow them only to breed on plants set out for the purpose that can be cleaned, the danger is that they will destroy their food and be lost. It is, therefore, of most consequence at present, to have the plants in the hedges of the villages set out, which require some months to be rooted, for the destruction of the country nopal in a hedge, which nothing else can hurt, where from the closeness of the plants the insects cannot be gathered or all destroyed, is astonishingly rapid and complete.

I have the honor to be, with the greatest respect,
MY LORD,

Your Lordship's most obedient humble Servant,

ANDREW BERRY,

Superintendent to the Honorable Company's Nopalry.

Fort St. George, March 23d, 1796.

TO DOCTOR ANDERSON, P. G.

THE Bearer will deliver you four specimens of Cochineal, reared and prepared by me here, which I hope will meet your approbation.—The difference of colour which you will observe in the samples, is owing to the insects being exposed to a greater heat in the early part of the process of preparation.

SAMUEL MAC MORRICE,

Salem, March 20th, 1796.

TO DOCTOR ANDERSON, P. G.

BY the bearer, I have the pleasure of sending you a specimen of the Cochineal I have made here; the produce of the plant you was kind enough to send me a few months ago.

I have made but a small quantity by way of experiment, and am apt to think that I have not altogether succeeded in clearing away the white covering from the insect: however, I make no doubt, but I shall improve in this respect in my future attempts; and in the mean time shall esteem it a favour if you will be so good, as let me know how I can surmount this little obstacle.

I have been at some pains to explain to the rich black people here, the high value of the dye, and the ease with which it can

be produced: they seem very sensible of the fact, and as the wild nopal grows in great abundance in the neighbourhood, they have engaged to turn their attention to the rearing of the insect.

I am much induced to think under so many auspicious circumstances, that the Cochineal will soon become an article of general traffic on the Coast, and from the happy superiority of its colour, of much emolument.

A friend having carried away your last publication, containing Doctor Berry's letter to his Lordship, you will oblige me by sending another copy of it.

WHITLAW AINSLIE.

Chingleput, March 23d, 1796.

TO DOCTOR AINSLIE,

Chingleput.

YOUR Cochineal is very good, and very well cleared of the white coverings.

The poor people gather ten or twelve pounds daily from my hedges, I allow them five fanams a pound for the raw Insect, and will give the same encouragement at Chingleput if you will carry it on.

JAMES ANDERSON.

Madras, March 24th, 1796.

TO DOCTOR JAMES ANDERSON, P. G.

I HAVE the pleasure to inform you, that I have delivered the ram safe at Sir John Sinclair's house, at Whitehall: he was in Scotland when I arrived. I have called upon him since he came to town, and he has promised that he would write to you of his receiving the animal.

I was perplexed and troubled to clear it at the custom house, there being a duty imposed upon all foreign animals and plants. I was obliged to send that, with some Bengal plants to the custom house, before I was allowed to send them to the place of their destination.

I was happy when I heard by my servant, that the animal was safe delivered, as I knew it would give you great pleasure to hear of its safe arrival. Wishing you health and happiness, I shall be happy to render you any service in this country in my power.

Your's very sincerely,

ALLEN CHATFIELD.

East India House, April 9th, 1795.

TO JAMES ANDERSON, Esq.

AS I understand you have now got a quantity of silk worms, I shall be glad if you will be so good to let me have some eggs, for although several applications have been made even to Bengal, I have not yet been able to get any eggs of the monthly worm; and those now remaining since the last wet season are so few, it must be a long time ere I could hope for a sufficient supply from them.

I am, &c.

BOSWALL PARKISON.

Vellout, April 18th, 1796.

TO MR. BOSWALL PARKISON,

AS you have failed in preserving the monthly worm during the two last cold seasons, your correspondent in Bengal should be instructed to send both cocoons and eggs by every opportunity in the months of December and January, when the length of time necessary to bring them through their different evolutions, will admit of their being transported so far with safety.

In the mean time I will however remark, that your Letters to me of the 21st September and 3d October expressly declare the beginning sickness amongst your worms to arise from the great numbers of them that were accumulated in one place, which must have increased with the difficulty of supplying them with dry leaves in the wet season—I would, therefore, recommend till such time as you get them distributed to the care of the inhabitants of the country at large, that you keep only a few under your own immediate inspection in the wet season; for in all countries where these insects have been cultivated, there are accidents that make it necessary they should be in various hands. Within the fortnight, I shall send you eggs of the white China monthly worm, and believe Mr. WOOLF's people can supply the yellow, of which they have lately received a breed from Mr. FRI-MAN, at *Masulipatam*.

Madras, April 19th, 1796. JAMES ANDERSON.

TO DOCTOR ANDERSON, P. G.

BY the snow *Mercury*, Captain *Smith*, who left this port a few days ago, I have the pleasure to send you a small box, containing the silk produced at Ganjam this season.

The box contains seventeen pounds some odd ounces of silk, all the produce of the annual worms, for although I have now

got a breed of both the yellow and white species of monthly worms, from *Lieutenant FRIMAN*, of Masulipatam, I have as yet produced little or no silk from them.

I have the pleasure to inform you, that I have now got finished the silk worm Bungalow; The silature house and all the wells that were required for the new plantation; a large portion of which is now planted, and the Mulberries are thriving extremely well.

However being convinced that the ultimate success, in the manufacture of silk depends chiefly on introducing the cultivation of the mulberry amongst the natives, my every exertion of late, has been directed with that view, and I am happy to inform you, that my success has been greater than I could well expect.

The inhabitants of three villages in the vicinity of the mulberry Plantation, have come forward, and have agreed to plant mulberries, provided Government will accede to the following terms; (viz.)

1st The Company are to purchase all the leaves the plantations produce.

2d They are to have a remission of one year's rent, for such ground as they plant with mulberries.

These terms, which in my opinion are so favorable, and so great an object being in view, I would gladly hope will meet with the sanction of government, I have wrote a long letter on this subject to Mr. GORDON, our collector, here, which he has promised without delay, to lay before the Revenue Board, with every support that lies in his power.

In order to acquiesce with the first of these conditions, a regular price must be established, as the handsuls and loyes as in Bengal, seem an undetermined mode to purchase leaves: however adhering to that proportion I have reduced them to weight, and have informed the natives, that mulberry leaves will be purchased at the Company's Plantation, at the rate of four maunds of twenty-five pounds each for one rupee, to which price they have willingly agreed.

With regard to the second of these conditions, as the natives are certainly highly deserving of encouragement, for engaging in the new undertaking; and as the remission is so small, being a sum not exceeding thirty rupees per annum, for the whole, I have no doubt of its being allowed by the Revenue Board: our collector is of the same opinion, and has kindly granted me permission, to contract with the natives immediately, and allow them to begin the plantations, which will be doubly advantageous as they will have the grounds planted before the setting in of the rains.

To prevent the natives employing such ground for other purposes, I have informed our collector it shall be my duty to visit the plantations frequently, and give them every assistance and information, that lies in my power.

From these observations our attempts I hope will soon be crowned with success;—mulberries will be generally cultivated in the District, which must ere long terminate in the rearing of the silk worm likewise, to which next step my every endeavour shall be exerted.

I have now given you some account of the stated progress hitherto, and probable success of the silk business in this District, which I would gladly hope will meet with your approbation, and which has been all along my anxious desire to gain.

The Cochineal is thriving extremely well; I have planted between five or six hundred nopal plants in one corner of the mulberry plantation; I have besides got many plants in pots covered with the insect, and I am just now, for the first time, beginning to remove a breed to those nopal plants in the plantation.—The Cochineal seems completely suited to the natural indolence of the natives, from the small degree of trouble attending the culture of it; so that I have no doubt when I turn my attention that way, I shall meet with little trouble in introducing it amongst them.

When ordered by the Revenue Board to take charge of the mulberry plantation at this place, especially as Government allowed me to encrease the plantation, and erect the necessary buildings, with the view of giving every possible encouragement to the culture of silk; flattered with this attention, I had no doubt but that I should have been permitted to have drawn a monthly allowance from the very additional trouble that then fell to my share:—however, in this I have been mistaken; and on the contrary have been a very considerable loser:—The numerous little expences I have unavoidably incurred on account of the mulberry plantation, are but poorly repaid from the small allowances I am at present upon.

Convinced of your friendship towards me, I have thus freely taken the liberty of stating my mind to you, confident, that if you think my exertions have any pretensions to the liberality of Government, you will assist my endeavours to procure some fixed monthly salary, as superintendant of the mulberry plantation at Ganjam.

I have the honor to be, &c.

SAMUEL LOCKHART,

Ganjam, April 9th, 1796.

Public Department.

To DOCTOR ANDREW BERRY,
Superintendent of the Hon. Company's Nopalry.

SIR,

I AM directed by the Right Honorable the President in Council, to desire that you will receive from the Town Major the Plants mentioned in the inclosed list, collected at *Pulo Pinang*, by Mr. CHRISTIAN SMITH.

I am, Sir,

Your most obedient Servant,

Signed.

J. WEBBE,

SECRETARY.

Port St. George, 10th April, 1796.

(signed) R. SHERSON, Ex.

Three boxes, containing Plants, collected at Pulo Pinang,
No. 1. Contains 312 Plants of a TREE that yields a RESIN, with which Vessels bottoms are pitched.
No. 2. Contains 346 Plants of the TREE that yields the large MASTS, commonly called POON.
No. 3. Contains 200 Plants of the ELASTIC GUM, or INDIAN RUBBER.

A true Copy,

A. FALCONAR,

DEPUTY-SECRETARY.

(signed) R. SHERSON, Compared,

The different kinds of Mulberry in my Garden, May 4th, 1796.

1st.—The large China Paper Mulberry; fig leaved, and long fruited.

2d.—Large China Mulberry; heart shaped leaf.

3d.—Cluster fruited China Mulberry; with but few, and these small leaves.

4th.—Black fruited China Mulberry; the leaves broad and very thin.

5th.—The Italian Mulberry; with undulated leaves.

6th.—The White fruited Mulberry; fruit very small.

7th.—Europe leaved Mulberry; the fruit long, green when ripe, and honey tasted.

8th.—Bengal Mulberry; leafy, the fruit a grateful sub-acid.

9th.—Hydrabad Mulberry; the leaf hard and woody, with very small red fruit.

10th.—The Madagascar Mulberry; with only female flowers, the leaves of which are lancet shaped, hard, and not eaten by the silk worms,

Although the fruit of No. 2, 3, 4, and 5, are very similar, yet there is a remarkable difference in the leaves, and habit of the plants; so that they never can be mistaken one for the other, the rest of the kinds are all very dissimilar.

JAMES ANDERSON.

TO DOCTOR ANDERSON, P. G.

I am favoured with your letter of the 4th instant, accompanying a second ample supply, of twenty large sheets of Europe brown paper covered with eggs, which has not only completely set me up, but as you mention, enabled me to afford assistance to any person who may want it, which if I did not, I should act very unworthy of the example set me.

Permit me now to return my sincere thanks, and I hope by my endeavours towards the introduction of the undertaking amongst the natives, to give you such satisfaction as may in some measure make up for the trouble you have been pleased to take in supporting the business.

I am, &c.

EOSWALL PARKISON.

Wellout, May 5th, 1796.

Revenue Department,

TO DOCTOR BERRY,

Superintendent of the Honorable Company's Nopalry,

BY desire of the Board of Revenue, I transmit to you the enclosed Extract of a letter from the Collector at Guntoor, with the specimens of Cochineal therein mentioned;—and they request to have the benefit of your remarks, particularly in respect to the difficulty mentioned by the Collector in separating the web from the insects,

S. R. LUSHINGTON.

Acting Secretary.

Fort St. George, 5th May, 1796.

Extract of a Letter from Mr. RAM, dated 28th April, 1796.

AT present there is none of the nopal plant within forty or fifty miles, except what I have planted in a garden for the purpose of instructing the natives, and which I find is far more productive than I imagined, and expressed in my letter of 20th February 1796; and would be much more so, if I had well-informed persons to pick off the insects, at the best period of their existence,

for the manufacture of the dye, I have now the honor to send to the Board, under a separate cover, a muster of insects gathered within the last fortnight; about as much more remains with me, and a far greater quantity might have been obtained, if I had proper people that knew the time proper to take them.—I have found considerable difficulty in separating the web which in the muster now sent, appears but imperfectly done, should be glad to know, whether it is sufficiently so for Exportation.

A True Extract,

S. R. LUSHINGTON.

Acting Secretary.

TO S. R. LUSHINGTON, Esq.

Acting Secretary to the Revenue Board.

I HAVE been favored with your letter of the 5th instant, which I have delayed answering till the specimen of Cochineal from Mr. RAM could be sufficiently dried and cleaned, which is now done, and accompanies this, in about half the quantity transmitted to me, the rest being either the coverings, other impurities, or too small grains to be esteemed in the market: what is now returned is sufficiently clean for every purpose; and the state in which it should be paid for.

I am surprised there should have been found any difficulty in separating the coverings—the mode pointed out being so simple and easy; and all I had to do for this, was to cause it to be exposed for two or three days in the sunshine to dry sufficiently, that when rubbed between the hands, the coverings might be detached, and afterwards separated by being tossed in the common basket used in sweeping our houses; and the whole was done by a common sweeper woman: as to the other point, on which information is requested; viz. knowledge of the best period when the insects should be picked off—it is equally easily attained.—If any insects for propogation are placed on plants at the beginning of a month, twenty-five or twenty-six days after, they may be examined; and if any young appear, the whole should be picked off as soon as possible, without bruising, or tinging the coverings, and the period during the hot season may always be considered not to extend beyond thirty days; plants that have had insects placed on them at different times, or where the insects have spread themselves, there never can be any doubt of gathering full sized insects, such as will give in drying, the size of what is now returned; which are as good as any I have seen, and properly prepared. The preservation of plants that insects have been once on, is what Mr. RAM will find most

difficult to effect; and I think it more than probable, that the plantation he mentions is by this time destroyed, from his expression "that a far greater quantity might have been obtained."

In a letter of mine to government, dated the 2^d March, which I suppose was transmitted to the Revenue Board, I particularly pointed out this, and every day's experience more and more shews the absolute necessity of having such plants carefully picked and washed, and examined every eight days, that such insects as may have escaped, may be destroyed, and such as may have been carried by the wind or by adhering to the feet of birds, for no plant can be considered as safe, if any insects are in the neighbourhood. It is this that will make it a more troublesome culture than was imagined, but which only requires care; and to this I would principally recommend the Board's attention, that all the plants in hedges should be planted out regularly six feet asunder and frequently examined to destroy every appearance of insects, till they are well rooted and large, and that no plantation should have more than one quarter with insects, as a plant will take at least three or four months to recover from its exhaustion.

I have had a correspondence with Mr. TORIANNI, on the same subject, who has great merit from the zeal he has shown to promote this culture, and who proposes sending ten or twelve men to the nopalry, to see the whole detail. If Mr. RAM wishes for farther aid, he may do this; or perhaps, I may prevail on some of my people to go to Guntoor, if it should be necessary.

I have only one observation more, that in addition to the price offered, a premium besides might be given to every person who rears a certain quantity, with great advantage, for some time, to induce a commencement; for when once the families of the natives learn how much it is in their power, there can be no doubt of success.

ANDREW BERRY.

Superintendent of the Honorable Company's Nopalry.
Fort St. George, 8th May, 1796.

TO THE RIGHT HONORABLE LORD HOBART,
President in Council.

MY LORD,

LAST night arrived here a box of silk from Ganjam, which I conceive may have been sent me by mistake, as the box likewise bears the Honorable Company's mark; but understanding that Mr. LOCKHART carries on the manufacture that was begun by Messrs. WEBB and RICHARDSON, I have desired my ser-

wants to take care of it, till such time as you may be pleased to signify how it should be disposed of.

My own idea is, that as no sample of annual silk made on the Coast has yet appeared in Europe, it should be forwarded on the first ship; with advice in your general letter to the Honourable the Court of Directors, and such remarks as you may think proper, to enable them to judge of the propriety, or otherwise, of continuing this pursuit.

Permit me likewise to offer an *arroba* (or quarter of an hundred weight) of the new Cochineal made in my garden, which is in readiness to be delivered to your order, in acknowledgement of the favor of the Honorable Court, in defraying the expences I had incurred on this account.

I am with all due respect,

MY LORD,

JAMES ANDERSON,

Fort St. George, May 12th, 1796.

Revenue Department.

TO DOCTOR JAMES ANDERSON,

SIR,

I AM directed by the Right Honorable the President in Council to acknowledge the receipt of your letter of the 12th instant, and to request that the bale of silk from Ganjam may be delivered at my office, in order that it may be transmitted to the Honourable Court of Directors.

The President in Council will at the same time have pleasure in forwarding to the Honorable Court, the *arroba* of Cochineal, which his Lordship has no doubt will be highly acceptable to them.

I am SIR,

J. WEBBE,

Fort St. George, May 21st, 1796.

Public Department.

TO DOCTOR JAMES ANDERSON, P. O.

SIR,

I AM directed to acknowledge the receipt of a box of Cochineal, and a box of Ganjam Silk, sent by you to be transmitted to the Honorable Court of Directors.

I am, SIR, &c.

A. FALCONER,

DEPUTY-SECRETARY,

Fort St. George, June 3d, 1796.

TO JAMES ANDERSON, Esq. P. G.

BY the bearer I have the pleasure of sending you, two pounds and a half of Cochineal, gathered from a hedge of wild nopals, growing in the neighbourhood of this place. Government, I understand, hold out the reward of one star pagoda, per pound, for any quantity that can be collected, which will no doubt be an inducement to the natives to turn their attention to its cultivation:—what I make in future, I shall in consequence send to Mr. PLACE, the Collector of the Jaghire, and by distributing the money arising from its sale amongst the people, on whose ground the plants grow, take in my opinion, the most effectual way of convincing them of the value of the dye.

Believe me, Sir,

WHITLOW AINSLIE.

Chingleput, June 2d, 1796.

TO LIONEL PLACE, Esq.

Collector of the Jaghire

UNDERSTANDING that you have paid attention to the propagation of sheep in the Jaghire, to assist your views in the improvement of the breed, I herewith send three rams, two of which are of the *Statopyga*, or fat-rumped kind, and the third although short-tailed, like those of this country, has even the face covered with wool.

I am, &c.

JAMES ANDERSON.

Fort St. George, June 10th, 1796.

TO DOCTOR ANDERSON, P. G.

I AM favored with your letter of the 10th, accompanying a valuable present of three sheep for the improvement of the breed in the Jaghire. The endeavours which I have yet been able to use towards this object, have not accomplished much; but the acquisition which you have sent me, and the happiness I derive from reflecting that they should at all have attracted your notice, will stimulate me to further exertions. My aim has hitherto been the increase of this animal, to supply consumption by weathers, for perhaps you are not acquainted that the sheep with which your own and other families are furnished, are ewes, with

young, which of course will hereby be preserved for breeding; but I have nevertheless had in view the improvement of the quality of our sheep, by the introduction of a foreign species—and as I think I may from your unsolicited kindness do so, I shall request your aid upon any future occasion that may be in your power towards this end.

The oldest of the fat-rumped sheep, I am sorry to say, is in a sickly state, and likely to die; the other two are in good health, and I shall have pleasure in reporting to you the effects of their prowess.

I remain,

LIONEL PLACE.

Carangooly, 18th June, 1796.

TO MR. LYTE, AT TRIPPATORE.

I SEND you some nutmegs, that have been brought from the Island of Banda, by Captain Newcome, of his Majesty's Ship Orpheus, as I am apprehensive that the atmosphere here will prove too hot and dry for them.

Let them be planted in rich black garden mould, in the shade; and in case they come up, forward some of the plants to Kistnagerry and Royacottah.

Some nutmeg and cacao trees have likewise been brought, but the nutmegs have perished in the passage, through bad weather and unavoidable accidents, although the greatest possible care was taken by bringing them in the Captain's own cabin, and the cacao trees have suffered considerably; yet as more may be expected by ships that happen to sail at a more favorable season, I could wish you to have soil ready prepared, under some shady trees, for their reception.

I am, &c.

JAMES ANDERSON.

Madras, June 25th, 1796.



FINIS.